FIRC5730W09-B20

SMD Type 730nm Infrared Emitter

Features

- High reliability
- High total radiated power
- Good spectral matching to Si photo detector
- RoHS compliance

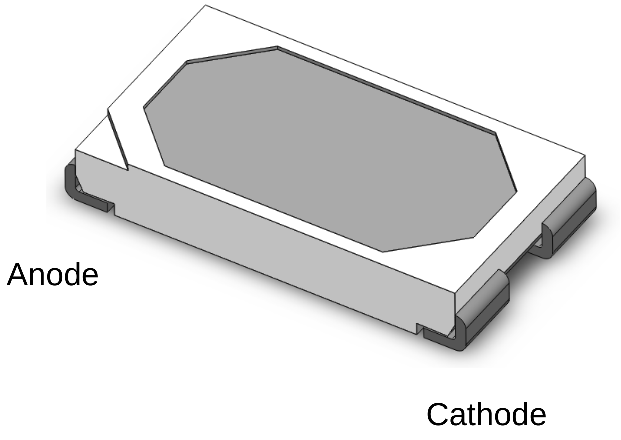
Applications

- Infrared sensor
- Light barrier

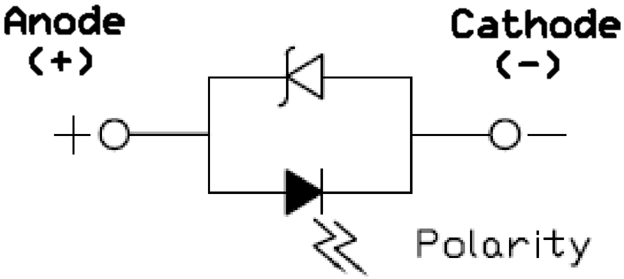
Description

The FIRC5730W09-B20 is a GaAlAs infrared LED housed in a miniature SMD package. The device has a peak wavelength of 730nm LED.

Package Outline



Schematic



Absolute Maximum Rating at 25^{0}C

Symbol	*Parameters*	*Ratings*	*Units*	*Notes*
I_F	Continuous Forward Current	150	mA	
I_{FP}	Peak Forward Current	1.0	A	1
V_R	Reverse Voltage	5	V	
T_{opr}	Operating Temperature	-40 ~ +85	^{0}C	
T_{stg}	Storage Temperature	-40 ~ +100	^{0}C	
T_{sol}	Soldering Temperature	260	^{0}C	2
P_D	Power Dissipation at(or below) 25℃Free Air Temperature	510	mW	

Electro-Optical Characteristics TA = 25°C (unless otherwise specified)

Optical Characteristics

Symbol	*Parameters*	*Test Conditions*	*Min*	*Typ*	*Max*	*Units*	*Notes*
Ie	Radiant Intensity	I_F=20mA	-	5.0	-	mW/sr	
		I_F=100mA	-	25.3	-		
		I_F =150mA	-	37.6	-		
Po	Total radiated power	I_F=20mA	-	15.7	-	mW	
		I_F=100mA	-	80	-		
		I_F =150mA	-	118	-		
λp	Peak Wavelength	I_F=20mA	720	730	750	nm	
Δλ	Spectral Bandwidth	I_F=20mA	-	25	-	nm	
θ1/2	Angle of Half Intensity	I_F=20mA	-	±60	-	deg	

Electrical Characteristics

Symbol	*Parameters*	*Test Conditions*	*Min*	*Typ*	*Max*	*Units*	*Notes*
V_F	Forward Voltage	I_F=20mA	1.7	2.0	2.4	V	
		I_F=100mA	2.2	2.5	3.1		
		I_F=150mA	2.3	2.7	3.4		
I_R	Reverse Current	V_R=5V	-	-	10	μA	

Notes:

1 : I_{FP} Conditions--Pulse Width≦ 100μs and Duty≦ 1%.

2 : Soldering time≦ 5 seconds.

Typical Characteristic Curves

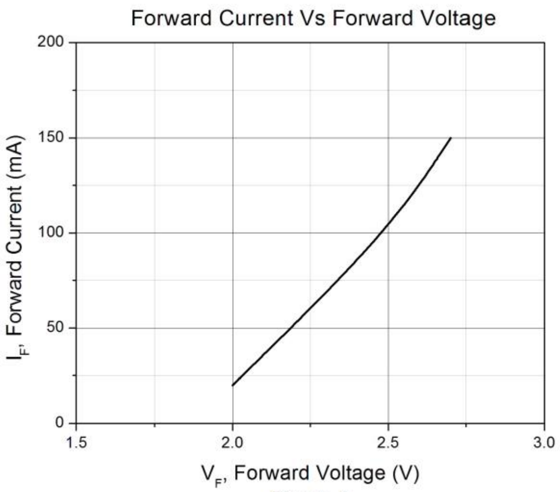


Figure 1

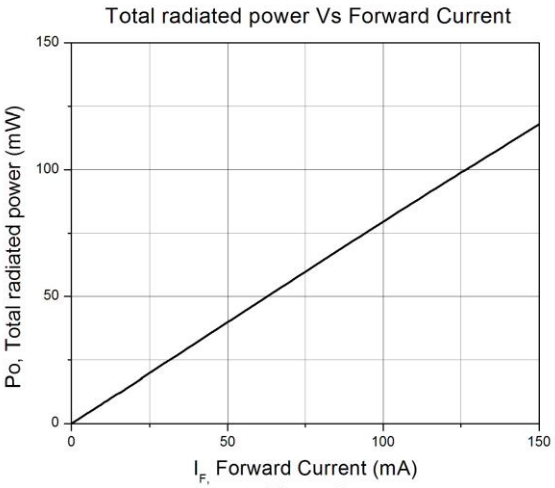


Figure 2

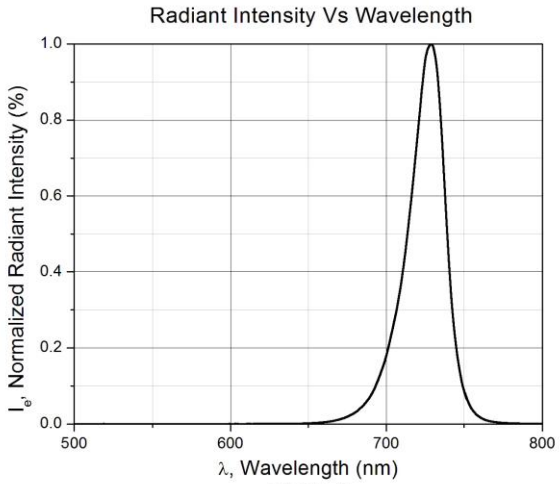


Figure 3

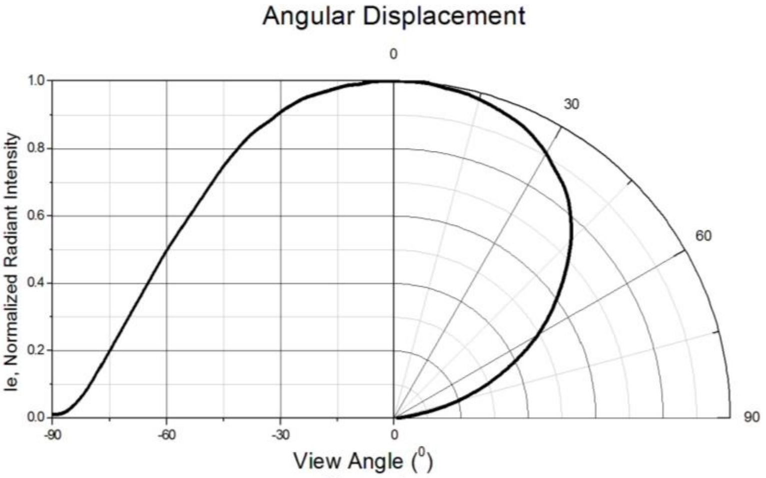
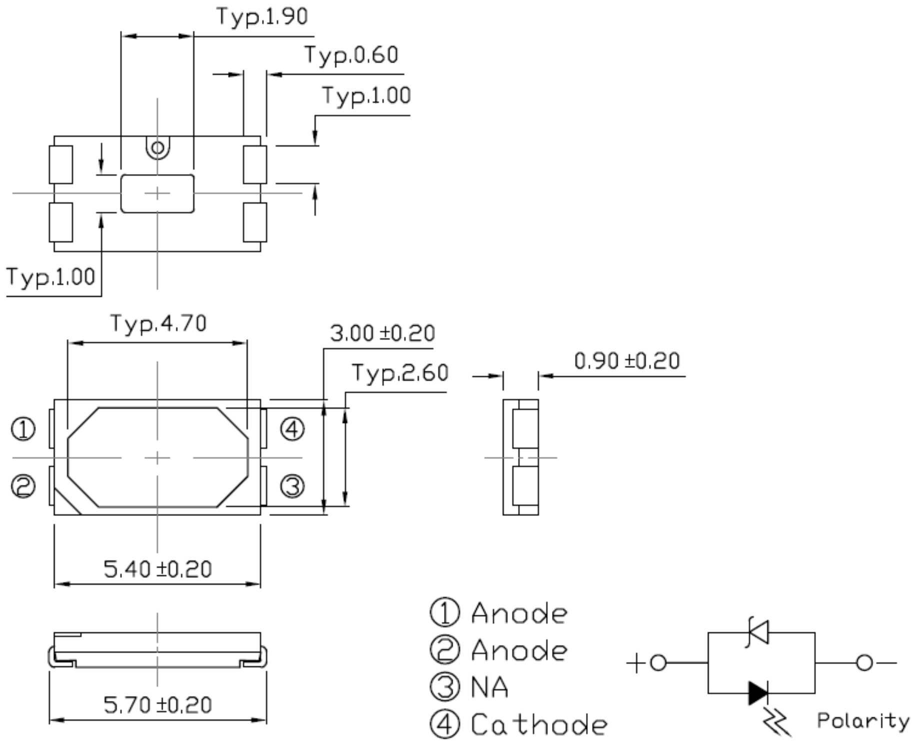


Figure 4

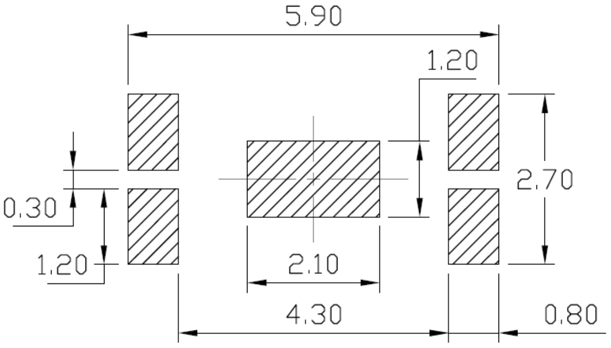
Package Dimension

All dimensions are in mm, unless otherwise stated.



Recommended Soldering Mask

All dimensions are in mm, unless otherwise stated

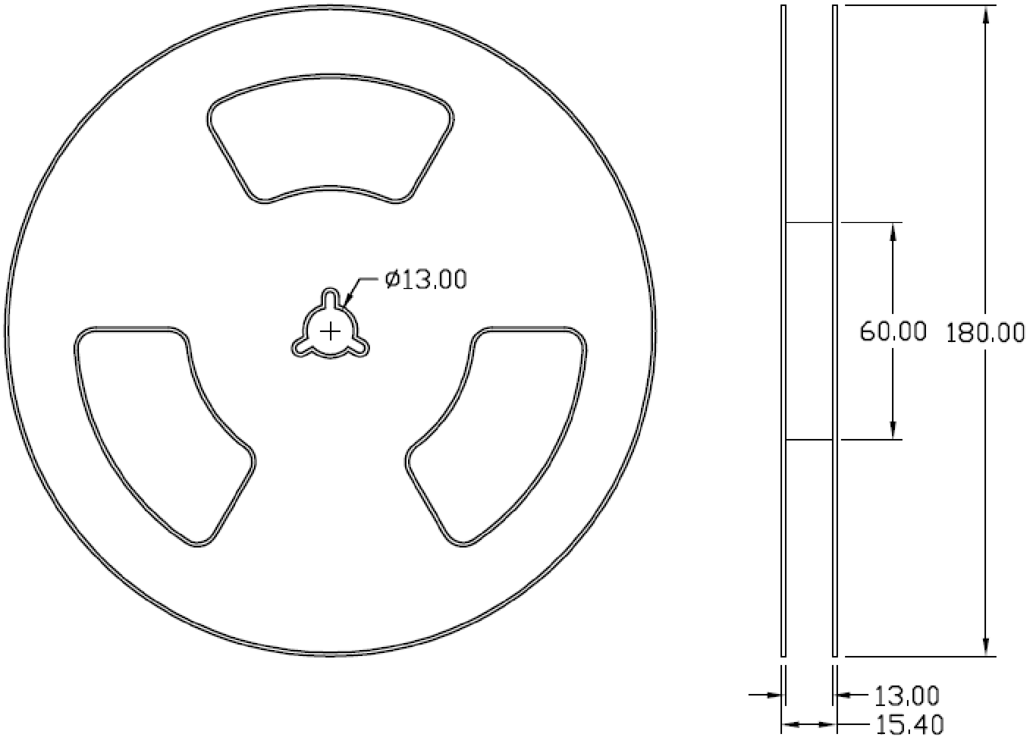


Ordering Information

Part Number	***Description***	***Quantity***
FIRC5730W09-B20	Tape & Reel	2000 pcs

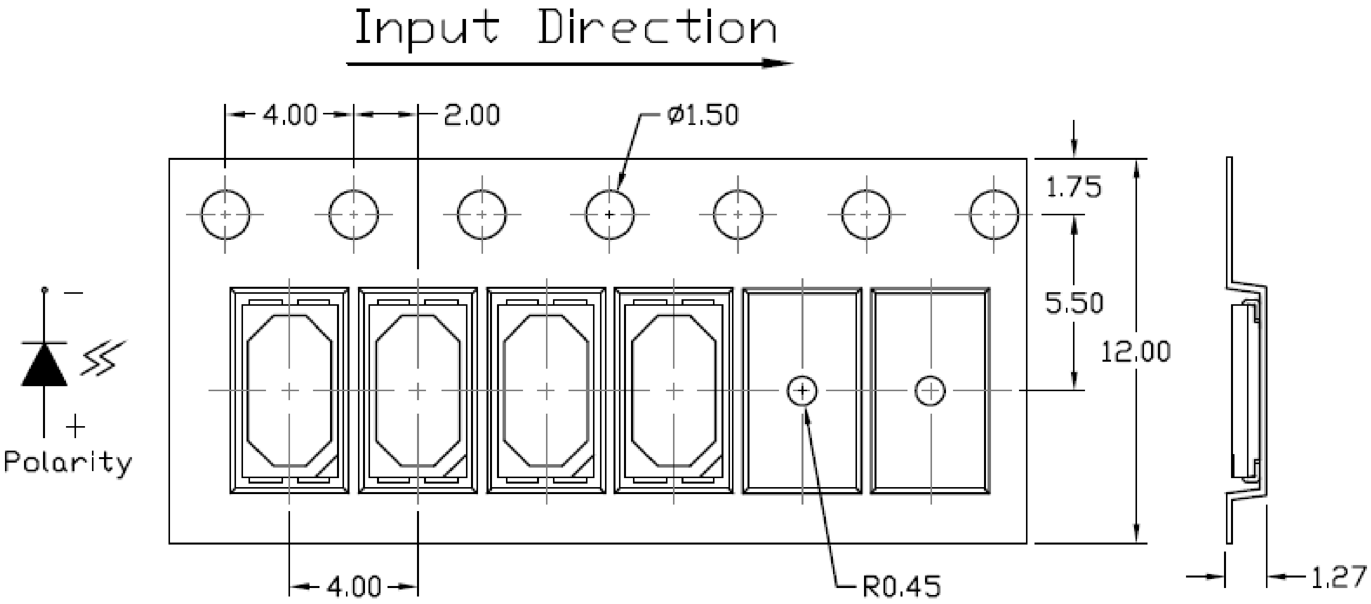
Reel Dimension

All dimensions are in mm, unless otherwise stated

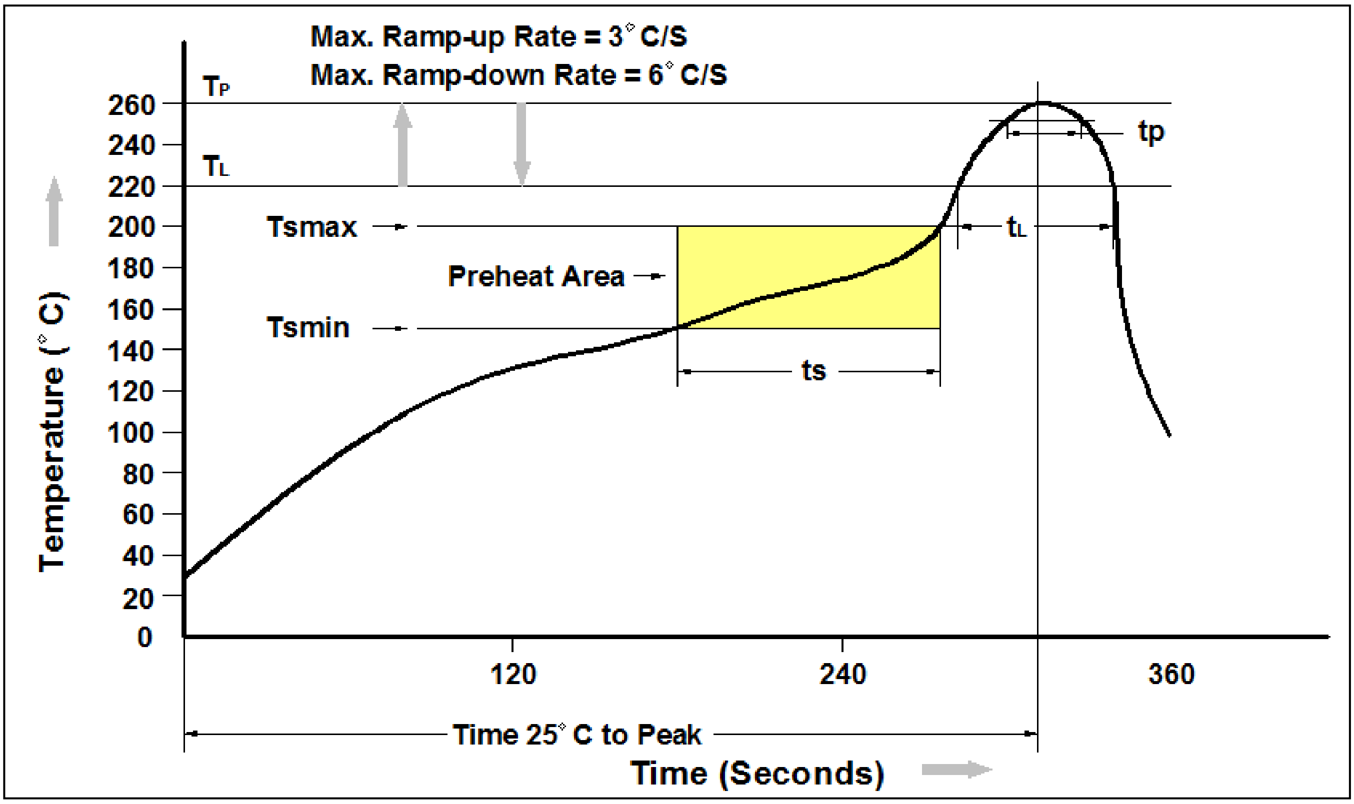


Tape Dimension

All dimensions are in mm, unless otherwise stated



Reflow Profile



Profile Feature	Pb-Free Assembly Profile
Temperature Min. (Tsmin)	150°C
Temperature Max. (Tsmax)	200°C
Time (ts) from (Tsmin to Tsmax)	60-120 seconds
Ramp-up Rate (t_L to t_P)	3°C/second max.
Liquidous Temperature (T_L)	217°C
Time (t_L) Maintained Above (T_L)	60 – 150 seconds
Peak Body Package Temperature	260°C +0°C / -5°C
Time (t_P) within 5°C of 260°C	30 seconds
Ramp-down Rate (T_P to T_L)	6°C/second max
Time 25°C to Peak Temperature	8 minutes max.

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